

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-15 are presently pending in this application, Claims 1, 5, and 14 having been amended. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, on page 23, lines 18-20.

In the outstanding Office Action, Claim 14 was objected to because of informalities; Claims 1, 2, 5, 7, 8, 10, 11, 13, and 15 were rejected under 35 U.S.C. §102(e) as being anticipated by Sugino et al. (U.S. Patent No. 6,853,823, hereafter “Sugino”), or in the alternative, under 35 U.S.C. §103(a) as being unpatentable over Sugino in view of Applicants’ Admissions (see specification, at page 3, line 10 to page 4, line 10; and page 10, lines 12-13 hereafter, “Applicants’ Admission”); Claims 1, 2, and 4-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Niimi (U.S. Pub. No. 2003/0104295, hereafter “Niimi’295”) in view of Applicants’ Admission, Japanese Patent 200-319538 (hereafter “JP’538”), Ladd et al. (Structure Determination by X-ray Diffraction, hereafter “Ladd”), and Sakai et al. (U.S. Pub. No. 2001/0022343, hereafter “Sakai”); Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Niimi’295 in view of Sakai, Applicants’ Admission, JP’538, Ladd, and Japanese Patent 11-140337 (hereafter, “JP’337”); Claims 1, 2, 5-8, 10, 11, and 13-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Niimi (U.S. Pub. No. 2002/0076633, hereafter “Niimi’633”) in view of Applicants’ Admission, JP’538, Ladd, and Sakai; Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Niimi’633 in view of Sakai, Applicants’ Admission, JP’538, Ladd, and JP’337; Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Niimi’633 in view of Sakai, Applicants’ Admission, JP’538, Ladd, and Niimi et al. (U.S. Pub. No. 2002/0051654, hereafter “Niimi’654”); Claim 9 was rejected under 35 U.S.C. §103(a) as

being unpatentable over Niimi'633 in view of Sakai, Applicants' Admission, JP'538, Ladd, and Tokutake et al. (U.S. Patent No. 6,120,955, hereafter “Tokutake”); Claims 12-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Niimi'633 in view of Sakai, Applicants' Admission, JP'538, Ladd, and Niimi'654; Claims 1-15 were rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over Claims 1-37 of Toda et al. (U.S. Patent No. 7,029,810, hereafter “Toda”) in view of Sakai, Applicants' Admission, JP'538, and Ladd; Claims 1-3, 5, 6, and 9-15 were provisionally rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over Claims 1, 5-10, and 12-19 of Niimi (U.S. Appl. No. 10/454,556, hereafter “Application'556”) in view of Sakai, Applicants' Admission, JP'538, and Ladd; and Claims 1-3, 5, 6, and 10-15 provisionally rejected on the ground of nonstatutory obviousness type double patenting as being unpatentable over Claims 1-24 and 29-35 of Niimi et al. (U.S. Appl. No. 10/944,614, hereafter “Application'614”) in view of Sakai, Applicants' Admission, JP'538, and Ladd.

With respect to the provisional rejections on the ground of nonstatutory obviousness type double patenting over Application'614 and Application'556, Applicants respectfully request that these rejections be held in abeyance until conditions are ripe for a non-provisional double patenting rejection.

With respect to the non-provisional rejection on the ground of nonstatutory obviousness type double patenting over Toda, Applicants submit herewith a terminal disclaimer in compliance with 37 C.F.R. §1.321(c). Therefore, it is respectfully requested that this rejection be withdrawn

With respect to the objection to Claim 14, Applicants respectfully submit that the amendment to Claim 14, reciting “the charger of the electrophotographic apparatus is configured to receive a superposed alternating voltage,” overcomes this ground of rejection.

With respect to the multiple grounds of rejection of Claim 1 under 35 U.S.C. §102(e), 35 U.S.C. §103(a), and non-statutory obviousness type double patenting, Applicants respectfully submit that the amendment to Claim 1 overcomes this ground of rejection.

Amended Claim 1 recites, *inter alia*,

a light irradiator, configured to irradiate a write light having a resolution of 600 dpi or greater to a surface of the electrophotographic photoconductor charged by the charger with an exposure energy of 5 erg/cm² or less, thereby forming a latent electrostatic image.

Applicants respectfully submit that the above-mentioned prior art fails to disclose or suggest at least these features of Claim 1.

The Office Action admits that primary references Sugino, Niimi'295, and Niimi'633, fail to disclose or suggest a light irradiator that irradiates a write light with an exposure energy of 5 erg/cm² or less (See Office Action at pages 6, 14, and 24 respectively).

The Office Action takes the position that the recitation of how much energy is provided by the light irradiator do not distinguish the structural elements in the instantly claimed apparatus and process cartridge from those in the primary references and that this language is mere functional language (see Office Action, at pages 6-7). The Office Action cites MPEP 2114 in support of this position. MPEP 2114 states:

“While features of an apparatus may be recited either structurally or functionally, claims< directed to >an< apparatus must be distinguished from the prior art in terms of structure rather than function....

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim.”

However, Claim 1 recites a light irradiator, configured to irradiate a write light with an exposure energy of 5 erg/cm² or less. This is a structural limitation because this feature

recites an apparatus structurally configured to irradiate a write light with an exposure energy of 5 erg/cm² or less.

The decision by the court in *In re Venezia*, 189 USPQ 149, 151-52 (CCPA 1976) held that the use of the words “adapted to” indicate a structural element. The court stated:

The claimed invention does include present structural limitations on each part * * *. For example, paragraph two of claim 31 calls for "a pair of sleeves * * * each sleeve of said pair *adapted to be fitted* over the insulating jacket of one of said cables." Rather than being a mere direction of activities to take place in the future, *this language imparts a structural limitation to the sleeve. Each sleeve is so structured or dimensioned that it can be fitted over the insulating jacket of a cable. A similar situation exists with respect to the "adapted to be affixed" and "adapted to be positioned" limitations in the third and fourth paragraphs of the claim.* * * *. (Emphasis added, citation omitted.)

Thus, Applicants submit that “configured to” (like adapted to) imparts a structural limitation.

Furthermore, it is well established that each word of every claim must be given weight. See In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Thus, it would be without merit to suggest that “configured to” language is of questionable limiting effect no matter how it is used in a claim.

Notwithstanding the above discussion, Applicants respectfully submit that there is no requirement that a recited structure be defined by what it is instead of what it does. MPEP § 2173.01 states, “Applicant may use functional language, alternatively expressions, negative limitations, or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought. As noted by the court in *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971), a claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.” For example, a motor is defined by what it does, not by the specific windings of copper wire or arrangement of pistons and cylinders that may make up the motor.

Applicants respectfully submit that the features recited in the body of amended independent Claim 1 must be given patentable weight regardless of whether they are functional limitations. They must be evaluated the same way as other claim limitations, i.e., for what they fairly convey to a person of ordinary skill in the art in the context in which the functional limitation is set forth.

Here, the Office Action has failed to show that the structure disclosed in the prior art is structurally configured to irradiate a write light with an exposure energy of 5 erg/cm² or less, as defined by Claim 1. The Office Action merely asserts that the structure in the prior art is equivalent to the structure of Claim 1, but does not provide support that the primary references are capable of providing the above-discussed feature (see Office Action at pages 6, 14, 24, 38, 43, and 49). As admitted by the Office Action, the primary references do not make any mention of irradiating a write light with an exposure energy of 5 erg/cm² or less, therefore they each fail to disclose or suggest that they provide the structural equivalent or perform the function of the electrophotographic apparatus of Claim 1.

Therefore, it is respectfully submitted that Claim 1 (and all associated dependent claims) patently distinguishes over Sugino, Niimi'295, and Niimi'633.

The Office Action also relies on JP'538 to disclose the feature of having an exposure energy of 5 erg/cm² or less in combination with primary references Niimi'295, and Niimi'633 (see Office Action at pages 17 and 26).

The Office Action takes the position that according to JP'538, the light exposure energy at a wavelength of 780 nm required to reduce the surface potential of the photoreceptor 15 after charging is 2 erg/cm² (see Office Action, at page 17, citing Table 3, and page 29 of the English translation of JP'538). However, in Table 3 of JP'538, what is being described is an experimental evaluation of a photo conductor showing “[t]he light exposure E required for making a half potential carry out optical attenuation of the ratio (DD)

of the surface potentials V15 (-V) and V15 15 second after electrification, and the surface potential V30 (-V after dark decay, and the surface potential V30 after a dark decay at this time with one half [$\text{m}\mu\text{J}/\text{cm}^2$] measured.” (see page 29 of JP'538). Nowhere in Table 3 or the accompanying text does JP'538 describe that 2 erg/cm^2 (or the equivalent $.2 \mu\text{J}/\text{cm}^2$) is a chosen light exposure E to be used in forming a latent electrostatic image. Although the value of $.2 \mu\text{J}/\text{cm}^2$ is shown in Table 3, there is no explanation in JP'538 of the significance of this value being listed.

Additionally, the Office Action does not show how the evaluation results described in JP'538 can be used in the inventions of Niimi'295 and Niimi'633 to achieve a light irradiator configured to irradiate a write light having a resolution of 600 dpi or greater to a surface of the electrophotographic photoconductor charged by the charger with an exposure energy of 5 erg/cm^2 or less, as defined in Claim 1. For instance, the accompanying text to Table 3 on page 29 of JP'538 describes using a discharge voltage of -5.6kV (see page 29, line 1). However, Niimi'295, for example, describes using a DC bias of -900V and an AC bias of 1.8kV as a charging condition (see para. 189 of Niimi'295). This example illustrates that the evaluation results of Table 3 in JP'538 were under unique conditions for a unique purpose of evaluating a photoconductor, and the Examiner has not shown how they can be readily combined with the other references to achieve the above-discussed features of Claim 1.

Therefore, Applicants respectfully submit that the combination of JP'538 and the prior art fails to disclose or suggest a light irradiator, configured to irradiate a write light having a resolution of 600 dpi or greater to a surface of the electrophotographic photoconductor charged by the charger with an exposure energy of 5 erg/cm^2 or less, thereby forming a latent electrostatic image, as defined in Claim 1.

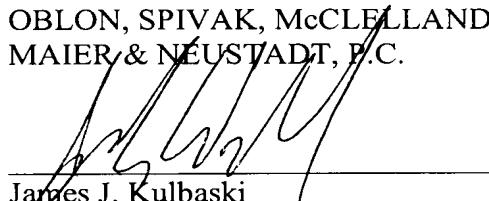
Sakai, Applicants' Admission, Ladd, JP'337, Niimi'654, and Tokutake have been considered but fail to remedy the deficiencies of Sugino, Niimi'295, Niimi'633 and JP'538 as discussed above.

Therefore, Applicants respectfully submit that Claim 1 (and all associated dependent claims) patentably distinguish over Sugino, Niimi'295, Niimi'633, JP'538, Sakai, Applicants' Admission, Ladd, JP'337, Niimi'654, and Tokutake, either alone or in proper combination.

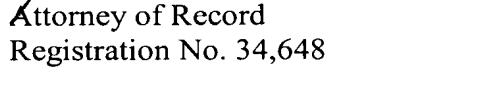
Consequently, in light of the above discussion and in view of the present amendment, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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